To participate in the Community Rating System of the National Flood Insurance Program, a community with one or more properties subject to repetitive flooding must take certain actions to address the risk to those properties. This handout provides information and examples to help communities delineate and map areas subject to repetitive flood losses. Additional copies of this handout are available from your ISO/CRS Specialist or by e-mailing NFIPCRS@ISO.com.

Mapping Repetitive Loss Areas

Requirements: To participate in the Community Rating System, a community with one or more repetitive flood loss properties must take certain actions that address those properties. When a community applies to join the CRS, FEMA will send a CD with relevant repetitive loss files. Communities already in the CRS will get an updated CD every year. There are three basic requirements:

1. The community must review FEMA's list of repetitive loss properties for accuracy and other items as explained in Section 501 of the *CRS Coordinator's Manual*. One of the files on the CD is labeled "instructions," and it explains how to do this. The result is an "updated" list of repetitive loss properties.

2. A community with 1–9 properties on its UPDATED list is referred to as a Category B repetitive loss community, as noted in Section 502 of the *Coordinator's Manual*. A community with 10 or more properties on the UPDATED list is a Category C community. Category B and C communities must distribute an outreach project each year to the properties in their repetitive loss AREAS (Section 503).

3. A Category C community must also prepare a floodplain management plan or area analyses that cover all of its repetitive loss AREAS (Section 503).

A **repetitive loss property** is a property for which two or more flood insurance claims of more than $1,000 have been paid by the NFIP within any 10-year period since 1978.

A **severe repetitive loss property**, as defined by Congress in the Flood Insurance Reform Act of 2004, is a 1–4 family property that has had four or more claims of more than $5,000 or two to three claims that cumulatively exceed the building's value. For the CRS, non-residential buildings that meet those same criteria are also considered severe repetitive loss properties.

A **repetitive loss area** is a portion (or portions) of a community that includes buildings on FEMA's list of repetitive losses and also any nearby properties that are subject to the same or similar flooding conditions

Areas: Both the second and third requirements, above, deal with repetitive loss AREAS. Many communities want to address only the individual properties on the updated list. It is important to note that the only reason a property appears on FEMA's list is because the structure had flood insurance and received two or more claims of at least $1,000 during any given 10-year period. These properties are merely representative of the community's overall repetitive flooding problem.

Other structures near the ones listed by FEMA may have been uninsured during the floods, may have had single flood insurance claims, or may have had multiple claims under different policies that the system did not recognize as being the same repetitively flooded address. From a community perspective, it is not fair to

single out those properties that happen to be on FEMA's list. All properties with the same exposure to repeated flood damage should be addressed.

Therefore, the second and third assignments listed above require the community to map its repetitive loss AREAS. Repetitive loss areas consist of neighboring buildings (including uninsured ones) that were subject to the same flood as those on the FEMA list.

> ***Note:*** *Some information on repetitive loss properties is subject to the Privacy Act. Information such as the names of people and addresses of properties that have received repetitive flood insurance claims payments or the amounts of the claims may not be released to the public. Such information should be marked "For internal use only. Protected by the Privacy Act."*
>
> *Generic information, such as total claim payments for an area or data not connected to a particular property, may be made public. For example, you may publish a map showing a repetitive loss area or a list of addresses in that area, provided you do not list individual addresses or show which parcels received flood insurance claims payments.*

Mapping repetitive loss areas: In some cases, the building on the list will be the only structure exposed to repetitive flooding. However, in most cases there will be other properties in the repetitive loss area besides those on FEMA's list. The important thing is to check out the neighborhood and make sure that all appropriate properties are included. Here is some step-by-step guidance.

1. Plot the updated list of repetitive loss properties on a map. The properties are listed in the AW-501 file and a spreadsheet (Microsoft Excel) file provided on your CD.

2. Plot nearby properties that have received one flood insurance claim. These are listed in the "historical claims" Excel file. This will show other properties with a history of flooding. Double-check the dates of the flooding ("Dt of loss") to see if they coincide with the dates for the properties on the repetitive loss list.

3. If you have the capability, overlay a topographic map or geographic information system (GIS) layer to identify areas that are obviously lower in elevation than areas without repetitive claims.

4. Draw lines around those areas with similarly situated properties, i.e., subject to flooding and lower-lying than the surrounding properties.

5. Check the area in the field to confirm the boundaries. If the mapping doesn't make sense, it may be that the repetitive loss buildings are unique. For example, they may be the only buildings in the neighborhood on slab foundations, so they are lower than the others. See example 3, below.

6. In every case, a visit to the site helps confirm that the boundary makes sense. See example 4, below.

7. If these "remote" ways to determine the repetitive loss area boundary don't explain why an area is flooded repeatedly, you should contact the property owners. See example 5, below.

8. If you conclude that there is only one building in a repetitive loss area, be sure to document the reasons for your conclusion.

9. If you have a lot of repetitive loss properties spread throughout your community or floodplain, you can declare your entire community or floodplain to be a repetitive loss area.

10. After the repetitive loss areas are identified, you must prepare a list of the addresses of all improved parcels in those areas. An improved parcel is one with an INSURABLE BUILDING on it. For CRS purposes, an insurable building is a walled and roofed structure, principally above ground and affixed to a permanent site, including a manufactured (mobile) home on a foundation. When in doubt, refer to Section 301 of the *Coordinator's Manual*.

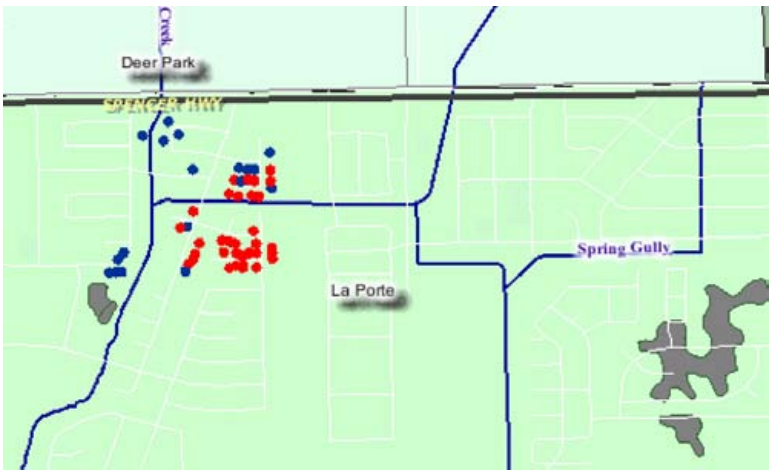
For more information, see the *Coordinator's Manual*, Sections 501 through 503.

Example 1. GIS Plotting

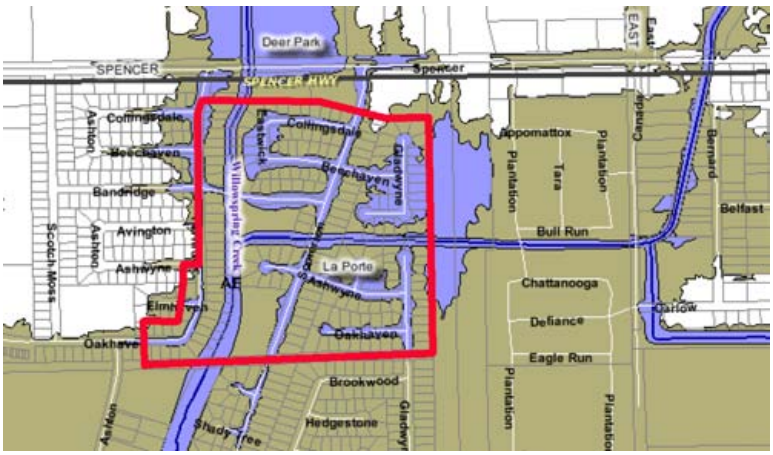
The University of New Orleans, Center for Hazards Assessment, Response, and Technology (CHART) provides repetitive loss GIS services to communities in Louisiana and Texas. These services allowed La Porte, Texas, to plot its repetitive loss and "severe" repetitive loss properties and determine appropriate boundaries for its repetitive loss areas. The green map shows the repetitive loss properties in blue and the severe repetitive losses in red. The plotting shows one large concentration of properties south of Spencer Highway, along two drainage canals.

With the GIS, addresses from FEMA's list are plotted on individual parcels. This is not shown here because that information is protected by the Privacy Act. The lower map shows the parcels and the A Zones and shaded X Zones from the Harris County Digital Flood Insurance Rate Map (DFIRM).

At this stage, the boundary of a repetitive loss area can usually be drawn. In this example, the northern and eastern boundaries are the edge of the residential subdivision. The large blue A Zone to the east is not included because it is vacant power line right-of-way. The western boundary roughly coincides with the boundary of the X Zone (shaded brown). A site visit found that the subdivision to the south of the streets with all the red dots is newer. It was built a little higher than the repetitively flooded area. There is a noticeable rise in the street as one drives south.



GIS layer showing regular and severe repetitive loss properties in blue and red, respectively



GIS layer for the County DFIRM. The blue areas are A and AE Zones. The brown areas are in the X 500 Zone.

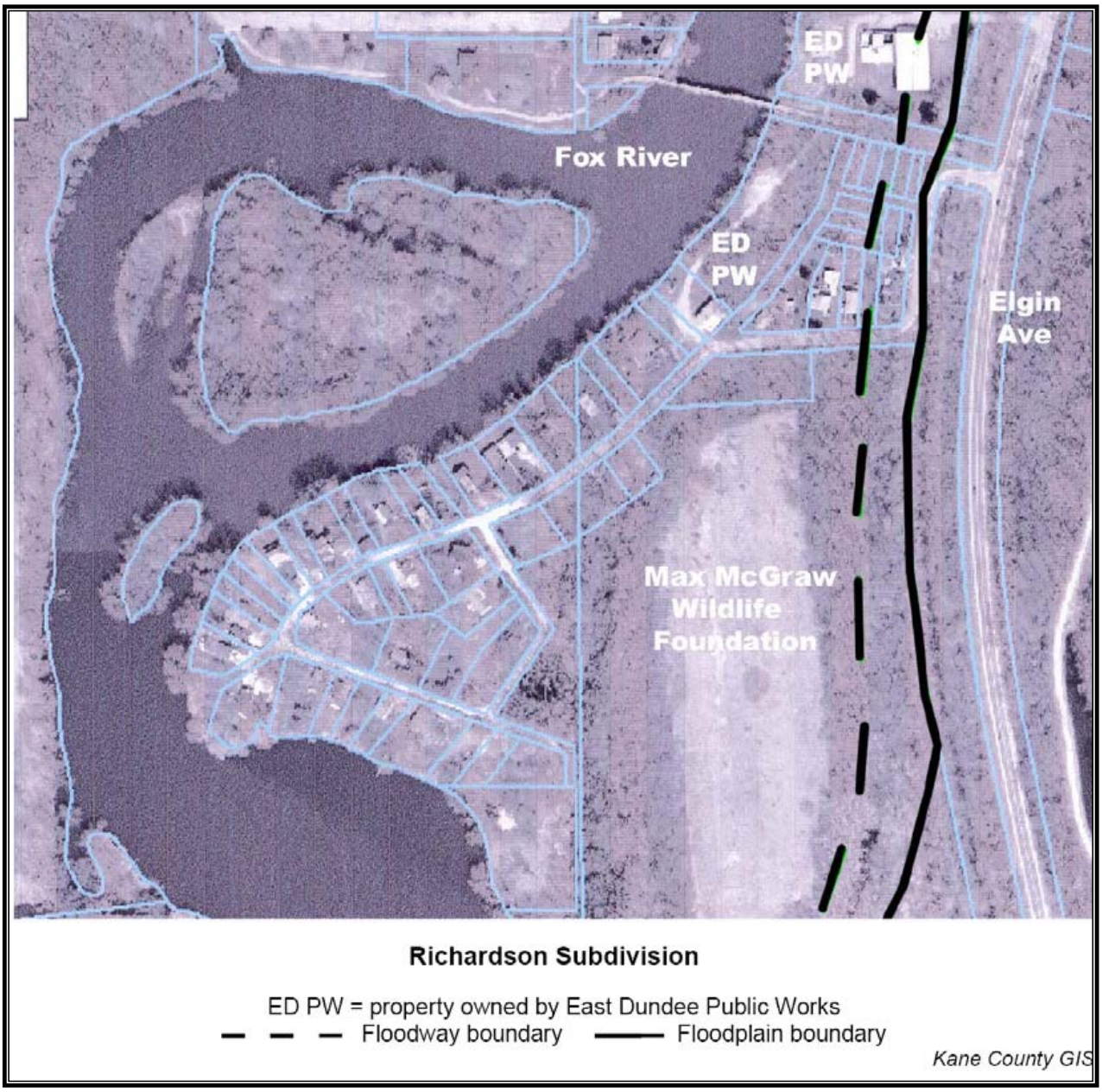
Maps like these two can be published without violating the Privacy Act. The top one shows repetitive loss properties, but the scale is such that the dots cannot be matched to specific addresses. The lower one shows all the parcels in the designated area, but does not identify which ones have had flood insurance claims.

This repetitive loss area has 51 repetitive loss properties, 31 of them qualifying as severe repetitive losses. The address list for this repetitive loss area has a total of 198 properties.

Example 2. Area Known to be Repetitively Flooded

The Richardson Subdivision is in unincorporated Kane County, Illinois, along the Fox River. It has 27 single-family homes, 24 of them constructed before floodplain management regulations took effect. As seen in the aerial map below, it is in a position that is "asking for trouble." The entire subdivision is in the floodway. It has a history of yard flooding in the spring and during ice jams on the Fox.

Only one property in the subdivision is on FEMA's repetitive loss list. Two others have received one flood insurance claim each. Instead of trying to isolate a small area based on the claims history, the County opted to include the entire subdivision as an official repetitive loss area.

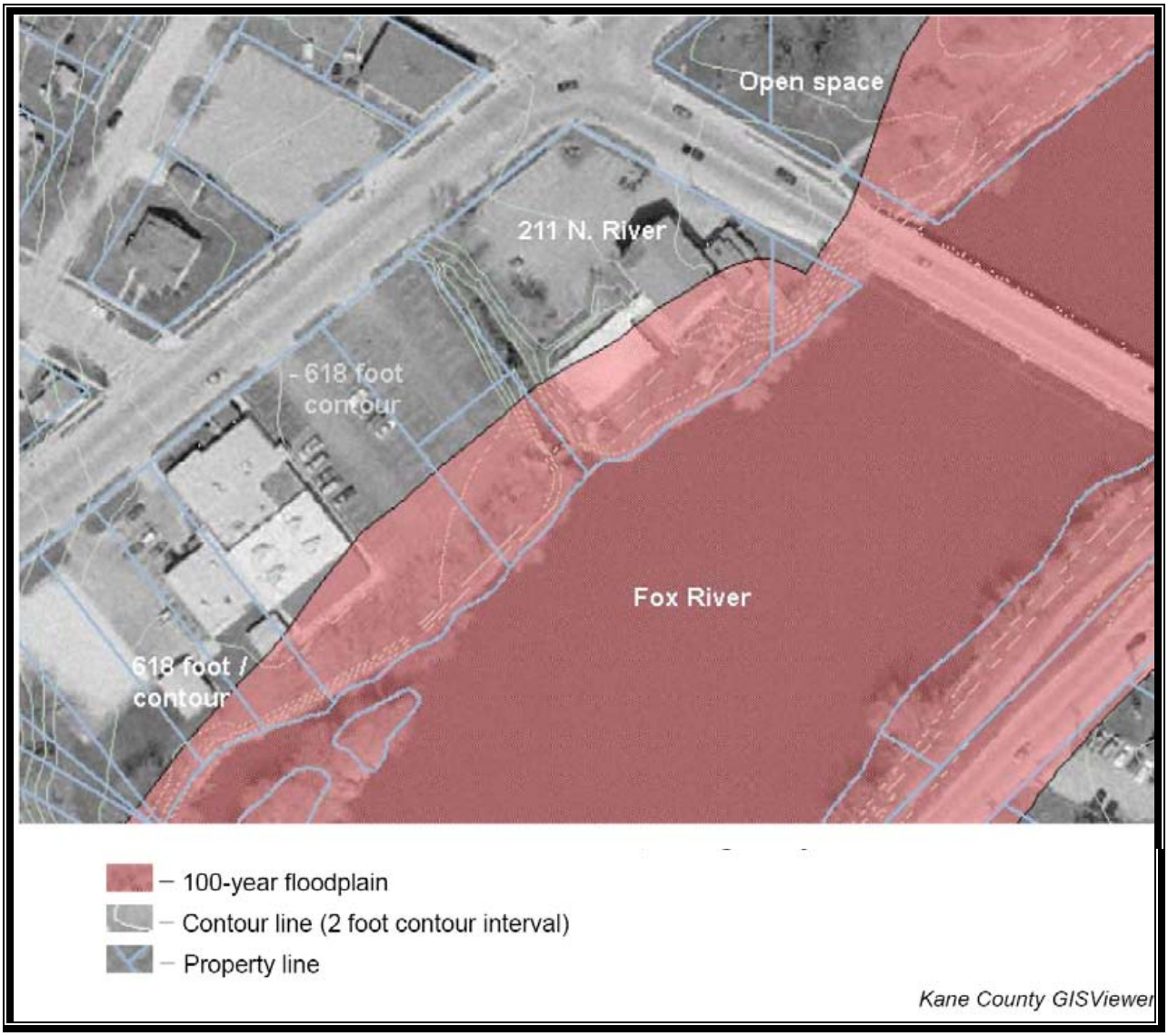


Example 3. Contour Map Data

The parcel at 211 North River also lies along the Fox River. The riverfront land to the north is open space, owned by a park district. To the south are a parking lot and several commercial properties that are closer to North River Street and on higher ground.

The community shot the elevation of the lowest grade adjacent to the building at 211 North River. It is 613.1 feet above sea level. The GIS topographic map below shows the 100-year floodplain (in red) and contour lines (in green). All other buildings in the area are above the 618-foot contour line and they have no history of flood insurance claims.

Based on this information the community determined that 211 North River Street is a single-property repetitive loss area.



Example 4. Site Visit Confirmation

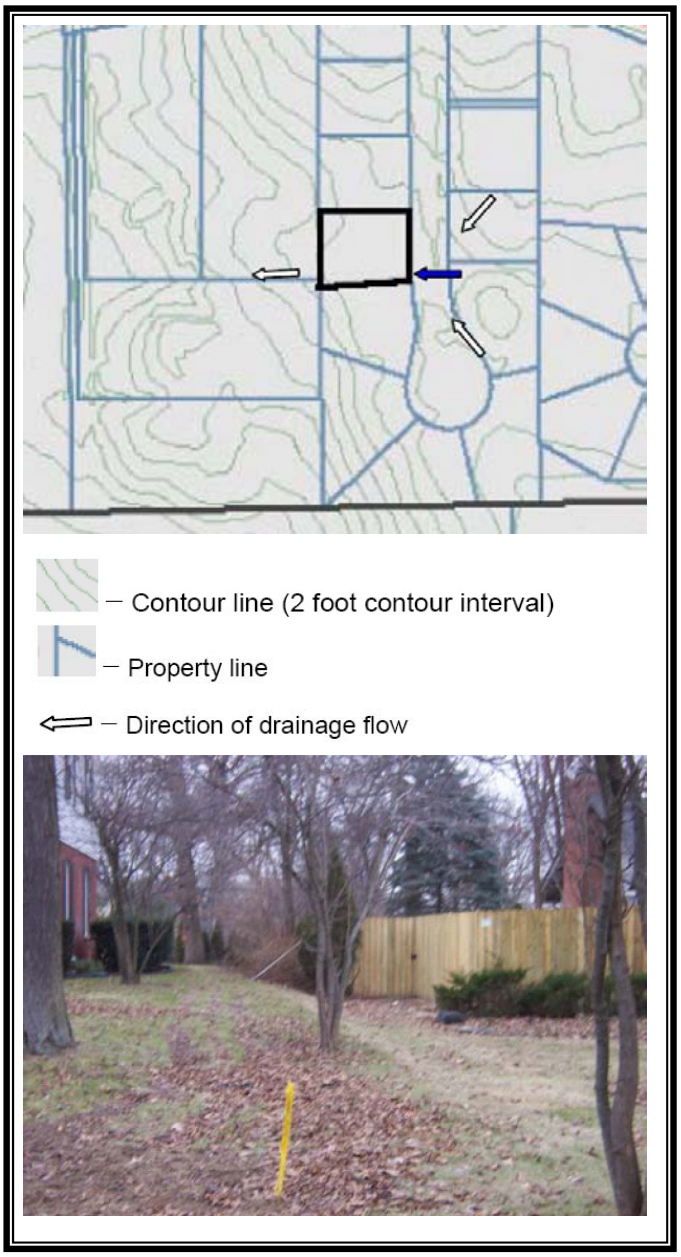
The City of Des Plaines, Illinois, plotted one repetitive loss property on the river at the end of Campbell Avenue. It was flooded by the Des Plaines River in 1986 and 1987. A Google Earth® air photo shows that there are many properties on Campbell Avenue.

A check of the historical file identified only one other property on Campbell Avenue with a flood insurance claim. It was flooded in 1987. Although the water was higher in the first flood, it is suspected that the property was uninsured in 1986. Seeing what the river can do, the owner bought a policy and was covered when the 1987 flood arrived.

A site visit found three similar homes at the end of Campbell—all three houses are elevated over garages and enclosed first floors. Other homes on the street are elevated on fill or are otherwise constructed above the flood level.

The City determined that all three homes are similarly situated. This repetitive loss area is composed of 1769, 1785, and 1799 Campbell Avenue. The map and the list of addresses can be publicized, but the Privacy Act prevents releasing which home received flood insurance claim payments.

Example 5. Property Owner Interview



This repetitive loss property is located in the X Zone, well away from any flood problem known to the County. The topographic map to the right was prepared by the County's GIS office. It has two-foot contour intervals. The arrows show the direction of surface flows. The land to the east and southeast is higher and naturally drains to the property.

The County visited the site, took some photos, and talked to the owner. The owner noted that some years earlier, the owner of the property to the east, across the street, filled his yard, including the drainage swale along the street. This reduced the area that stored surface runoff, but the lot still drains toward the repetitive loss property.

The land to the east drains to an 18-inch pipe that runs under the street. Its location is shown by the blue arrow in the map. The pipe empties into the southeast corner of the repetitive loss lot. It has been well maintained, so water readily drains into the front yard of the site. Water has been known to cover half the front yard until it can drain to the west.

The low parts of the property in question are the north and south property lines. Surface runoff flows toward the house from the north, east, and south, around the house and on to the west, primarily around the south side of the property. The ground on the property to the south is higher (see photo). The houses to the north and south were built in 1962 and 1963 while the repetitive loss home was built later, in 1969. Apparently it was one of the last lots on the street to be built on, possibly because it is lower than the rest.

As seen on the topographic map, the ground is flat, so the water does not drain from the front yard very quickly. Flow is also slowed down by a fence and plantings along the property line. Eventually the front and side yards drain and the water flows downhill to the west.

Based on the topographic data, the interview with the owner, and the lack of other flood insurance claims in the area, the County concluded that this property constitutes a single-parcel repetitive loss area.